

# Is the endangered Long-billed (Moreau's) Tailorbird *Orthotomus [Artisornis] moreaui* safe in the East Usambaras?

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Le statut de la Couturière de Moreau *Orthotomus [Artisornis] moreaui*, espèce ne se trouvant que dans les Usambaras orientaux en Tanzanie et dans le nord du Mozambique, est considéré comme Critique<sup>4,13</sup>. En vue de cette situation alarmante, une étude de population a été entreprise dans la Réserve naturelle d'Amani, Tanzanie, en juin 2000. Les résultats indiquent qu'il existe une petite population de 150–200 individus répandus sur le plateau des Usambaras orientaux, principalement à l'intérieur de la Réserve. Des précisions sur la population estimée sont présentées, ainsi que des observations générales faites pendant la période de janvier 2000–mars 2001; celles-ci mettent à jour les connaissances du statut actuel de l'espèce, son écologie et sa protection.

## Background

Reg Moreau discovered Long-billed (Moreau's) Tailorbird *Orthotomus [Artisornis] moreaui* in 1930 in Amani, within the East Usambara Mountains, Tanzania<sup>11</sup>. It was not recorded from the area again until the 1970s when several new observations were reported<sup>4,5,14,16</sup>. Despite intensive searches in other Eastern Arc mountains, the species remains known only from the Amani and Nilo areas of the East Usambaras<sup>4–6</sup>. An isolated population on the Njesi Plateau, in Mozambique, has not been searched for since 1945<sup>1,2,13</sup>. The species is currently listed as Critical<sup>13</sup>.

Since the 1970s very few individuals have been observed in the Amani area. Cordeiro<sup>6</sup> recorded it in Nilo Forest Reserve, 20 km north of Amani, in 1994. During the last 20 years fewer than 30 sightings have been made in Amani and Nilo, some possibly of the same individuals<sup>4–6</sup>. The few documented observations suggest that it resides in forest edge and large forest gaps<sup>4,5,14</sup>, but its precise habitat requirements, biology and status are poorly understood.

## Distribution and population estimate

Earlier records of the Long-billed Tailorbird centred on the Amani area<sup>4,5</sup>, with recent reports from further north on the same plateau, as far as Mt. Nilo<sup>6</sup>. Prior to this new assessment of the distribution and abundance of the species, no population estimates had been made, though the lack of records in the 1980s and early 1990s suggested a population decline in the East Usambaras<sup>4</sup>. Given hindsight, insufficient attention had been paid to the correct habitat and most visits to the plateau had been rather short.

In June 2000, we conducted a pilot count of the tailorbird. Preliminary encounters with the species

during an ongoing bird census conducted by NJC, covering a large part of the nature reserve and its environs, indicated that it prefers forest edges above 800 m<sup>7</sup>. Therefore, we concentrated subsequent efforts along forest edge on the plateau of Amani Nature Reserve, at 800–1,050 m.

Using playback of the most common vocalisation at 200 m intervals along the forest edge, a total of 84 point samples were made and 44 individuals were counted at 27 of these. As one-third of suitable habitat was sampled, we assume a conservative total estimate of 150–200 individuals. More than 50% of our records were of lone individuals. Because of this our estimate is likely to be low as the species regularly occurs in pairs, with one individual being more elusive than the other. Several large gaps within the forest and the large area of forest north and east of Monga and Derema to Nilo were not sampled. Thus far we have found the species to be most abundant in the Sangarawe to Monga areas, with fewer individuals west, east and south of these general locations.

The new population estimate, while conservative, may indicate an increase based on previous data<sup>4,13</sup>. Furthermore, the many observations at forest edge may contradict the previous suggestion by Collar & Stuart<sup>5</sup> that it is susceptible to forest disturbance. It is probable that increased knowledge of its distinctive vocalisations has heightened the species' detectability. Additionally, its apparent favoured habitat was investigated more thoroughly during our work than previously. Since the population study, Long-billed Tailorbird has been discovered at further forest-edge sites and within some large gaps inside forest (NJC, B Munisi, C McBride and M Joho pers obs 2000–2001).

## General ecology

### Habitat requirements

Previous reports have suggested that this secretive species is restricted to forest edge and clearings with vines and climbers<sup>12</sup>. It was also believed to prefer dark forest undergrowth<sup>12</sup>, and more recent reports indicated that it could be partial to wetland habitats at the forest edge (W Newmark pers comm).

Our observations suggest the species is a retiring bird of dark undergrowth with a high density of vines and climbers, but as previously noted<sup>6,14</sup>, it also ventures into sunlit and open areas within suitable habitat. While largely restricted to forest-edge habitat, possibly near water, we have also discovered the species in a large wetland glade and large gap deep within primary forest, indicating how poorly known its habits remain. Furthermore, Collar & Stuart<sup>5</sup> noted the population in Mozambique had probably been mistakenly reported by Benson<sup>2</sup> to be a canopy dweller. It should be noted that Benson<sup>2</sup> indicated the canopy to be of a mean height of c8 m, ie well within the range of our encounters of the species. In addition to its primary forest-edge and gap habitats, we have also found it in dense *Lantana* thickets adjacent to forest, indicating an ability to persist in relatively disturbed habitats with sufficient shelter and food.

### Foraging behaviour

We have observed the species gleaning foliage of vines and dense shrubs, being rapid and deliberate in its movements through vegetation. While foraging, individuals largely remained in the understorey below 3 m. However, they occasionally work areas at 4–20 m. All observed prey have been invertebrates, many skilfully obtained by deep piercing of densely packed foliage. McEntee, Cordeiro & Moyer (in prep) have conducted a short, but in-depth quantitative

study of the tailorbird's foraging ecology, which will be reported elsewhere. Unlike Stuart & Hutton<sup>14</sup> who reported it to be an occasional member of mixed-species foraging flocks, we have not observed it in such groupings in over 150 observations of at least 12 different pairs.

### Breeding

There is no previous breeding information for the species. One of us (NJC) found two recently fledged young with parents in mid-October 2000, indicating that eggs are laid in September. Vocalisations of territorial pairs were more frequent in October–November, suggesting breeding activity during this period. The two young were observed until mid-March 2001, being fed by both parents until early February; subsequently parents and young have foraged separately, but still within a group. These are resident around the Amani Nature Reserve headquarters and will be monitored until July 2001. No definite nests have been located by us, though one believed to have been constructed by this species was discovered by R. Stjernstedt in Amani<sup>9</sup>. While the description in *Birds of Africa* implies that the nest was attributable to this species, Fry<sup>9</sup> opined that photographs do not indicate the sewn leaves to be of the same plant in which it was constructed. We believe more definitive evidence of the species' nest is needed.

### Vocalisations

Slater & Moreau<sup>12</sup> described the species' vocalisation as 'percussive and mechanical, like a series of deliberate blows with a mallet on an iron peg'. Zimmerman *et al*<sup>18</sup> provide a very adequate description of one of the commonest calls: *tcheu-tcheu-tcheu-tcheu-tcheu*. Vocalisations are varied, with at least 2–3 variations on the above, and one highly specific rasping call given when contacting conspecifics.



Long-billed (Moreau's) Tailorbird *Orthotomus* [*Artisornis*] *moreau* (N. J. Cordeiro)



## Does competitive exclusion explain a disjunct distribution?

Stuart<sup>15</sup> speculated that Long-billed Tailorbird is sufficiently similar to two other species that probably share the same niche, that its restricted and disjunct distribution in the Njesi Plateau and East Usambaras could be explained by competitive exclusion. One of these species, Grey-backed Camaroptera (Bleating Warbler) *Camaroptera brachyura*, is sympatric with the tailorbird at most forest-edge sites, but not within interior forest gaps, which are occupied only by the tailorbird. Both share food resources in the lower strata, but the camaroptera also takes prey on the ground and rarely ventures above 3 m. This behaviour contrasts with that of the tailorbird, described above.

The other possible competitor mentioned by Stuart<sup>15</sup> is African Tailorbird *Orthotomus* [*Artisornis*] *metopias*. This is extremely rare in the Amani area but not uncommon at higher elevations on Nilo. As this species occurs on most of the intervening mountains between the East Usambaras and Njesi Plateau, but is rare in the Amani area, Stuart<sup>15</sup> suggested that this might be due to competition with Long-billed Tailorbird. In intervening areas he suggested that *metopias* could have outcompeted its congener.

Both species occur in the Nilo area<sup>6</sup>: *moreaui* within a large glade at the forest edge and the fairly common *metopias* at the forest edge and interior. It is difficult to ascertain numbers of *metopias* in the Amani area during Moreau's times as no estimates were made. Nonetheless, he infrequently observed the species in the 1930s<sup>12</sup>, but prior to and following Moreau's residence in Amani there were few if any reports<sup>8,14</sup>. Despite an annual mist-netting programme, Newmark<sup>10</sup> has only sporadically captured a tiny number of *metopias* in Amani during the last two decades. Our current work has not produced any records (NJC pers obs), despite knowledge of its vocalisations. That *metopias* has declined is highly probable, but that this is due to competition with its congener as proposed by Stuart<sup>15</sup> appears unlikely. As *metopias* occurs within the interior of moist, dense forest, usually above 1,000 m, it is probable that its population at Amani was always small and its purported decrease may relate to this factor or a rapid decrease in available habitat between the late 1800s and 1980s. Long-billed Tailorbird is segregated by habitat.

## Unresolved taxonomy?

When Sclater<sup>11</sup> described *moreaui* he placed it within the genus *Apalis*, with a clause that several characteristic features (ie greater bill length and number of tail

feathers) could warrant erection of a new genus. More recently the species has been considered a tailorbird *Orthotomus*<sup>9,17</sup>, which has gained adherence within the conservation community<sup>4</sup>, but *Birds of Africa* places it in *Artisornis*. While it shares a number of morphological features with Asian tailorbirds<sup>9</sup>, it is not known whether it also builds a distinctively sewn nest of leaves like that of other *Orthotomus*. To this confusion, we add our discovery that the individuals at Amani possess long filoplumes (Figs 1–2), a feature that has not been previously noted<sup>1,9,11,12,17</sup>. Thus controversy surrounding its generic placement appears set to continue.

## Conservation status

Amani Nature Reserve was established in 1997 to provide greater protection to this biodiversity hotspot. Such status will enhance the survival possibilities for rarer animals and birds, including *moreaui*, which is widespread in the reserve. Our work has demonstrated that the species' population is not as low as feared and that it is also more widespread than previously believed. Even if this encouraging news is solely due to more thorough field work than has previously been conducted, the existence of this population is a positive development.

Nonetheless, there is still a pressing need to assess the species' distribution and numbers within the rest of the nature reserve and in surrounding forest at suitable elevations. A short detailed ecological study on territory sizes, foraging ecology and behaviour is planned for the future. It is envisaged that details of its habitat specificity will be obtained to gain a better understanding of how to manage for the species in the East Usambaras. We also plan to establish whether forest-edge habitats adjacent to wetlands are preferred over drier areas.

Many years elapsed without any sightings of this skulking bird in the East Usambara Mountains, and it has not been reported from other Eastern Arc mountains that possibly hold suitable habitat. We consider that there is a strong possibility of finding it in the Udzungwa Mountains, particularly in more level areas at similar altitudes.

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To download a copy of the relevant East Usambara Conservation Area Programme report (No. 47), please refer to the internet site [www.usambara.com](http://www.usambara.com). At this site one can also find an updated list of 342 birds of the East Usambara Mountains. A checklist of the East Usambara avifauna is available for sale at the Amani Nature Reserve Visitor's Centre in Sigi.

## References

1. Benson, C.W. 1945. A new race of Long-billed forest warbler from northern Portuguese East Africa. *Bull. Br. Ornithol. Cl.* 56: 19.
2. Benson, C.W. 1946. A collection of birds from near Unangu, Portuguese East Africa. *Ibis* 88: 240–241.
3. Britton, P.L., Stuart, S.N. and Turner, D.A. 1984. East African endangered species. *Proc. V Pan-African Ornithol. Congr.*: 679–688.
4. Collar, N.J., Crosby, M.J. and Stattersfield, A.J. 1994. *Birds to Watch 2: the world list of threatened birds*. Cambridge, UK: BirdLife International.
5. Collar, N.J. and Stuart, S.N. (1985) *Threatened Birds of Africa and related islands: the ICBP/IUCN Red Data Book*. Cambridge, UK: International Council for Bird Preservation.
6. Cordeiro, N.J. 1998. A preliminary survey of the montane avifauna of Mt Nilo, East Usambaras, Tanzania. *Scopus* 20: 1–18.
7. Cordeiro, N.J. 2001. Report on a pilot study of the Long-billed tailorbird *Orthotomus moreaui* Sclater in the East Usambara Mountains. Tech. Rep. 47. Dar es Salaam: East Usambara Conservation Area Management Programme & London, UK: Forestry and Beekeeping Division, Finnish Forest & Park Service, and Society for Environmental Exploration.
8. Friedmann, H. 1928. A collection of birds from the Uluguru and Usambara Mountains, Tanganyika Territory. *Ibis* 12: 74–99.
9. Fry, C.H. 1976. On the systematics of African and Asian tailorbirds (Sylviinae). *Arnoldia* 8: 1–15.
10. Newmark, W.D. 1991. Tropical forest fragmentation and the local extinction of understorey birds in the Eastern Usambara Mountains, Tanzania. *Conserv. Biol.* 5: 67–78.
11. Sclater, P.R. 1931. Three new birds from Amani Forest, in the Usambara District of Tanganyika, recently obtained by Mr. R.E. Moreau. *Bull. Br. Ornithol. Cl.* 51: 109–112.
12. Sclater, P.R. and Moreau, R.E. 1933. Taxonomic field notes on some birds of north-eastern Tanganyika territory, Part 3. *Ibis* 13: 1–33.
13. Stattersfield, A.J. and Capper, D.R. 2000. *Threatened Birds of the World*. Cambridge, UK; BirdLife International & Barcelona: Lynx Edicions.
14. Stuart, S.N. and Hutton, J.M. 1978. The avifauna of the East Usambara Mountains, Tanzania. Unpublished report of the Cambridge Ornithol. Expedition to Tanzania, 1977.
15. Stuart, S.N. 1981. An explanation for the disjunct distributions of *Modulatrix orostruthus* and *Apalis* (or *Orthotomus*) *moreaui*. *Scopus* 5: 1–4.
16. Turner, D.A. 1978. Interim report on the endangered birds of the Usambara Mts. Unpublished manuscript.
17. White, C.M.N. 1960. Further notes on African warblers. *Bull. Br. Ornithol. Cl.* 80: 147–152.
18. Zimmerman, D.A., Turner, D.A. and Pearson, D.J. 1996. *Birds of Kenya and northern Tanzania*. London, UK: A. & C. Black.

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